

Patent claims

1. A cutting mechanism for an installation (A) for producing extruded plastic or laminated tubes (2) with a carriage (6) which can be moved back and forth with respect to a base (7) and on which a cutting device (5) is mounted, characterized in that the carriage (6) with the mounted cutting device (5) is formed as a linear motor and is movable with respect to the base (7).

2. A cutting mechanism for an installation (A) for producing extruded plastic or laminated tubes (2) with a carriage (6) which can be moved back and forth with respect to a base (7) and on which a cutting device (5) is mounted, characterized in that a linear back and forth movement of the carriage (6), formed as a linear motor, with respect to the base (7) can be controlled and/or regulated as the slave by means of a transporting mechanism (4), arranged upstream of the cutting device (5), as the master.

3. The cutting mechanism as claimed in claim 1 or 2, characterized in that the carriage (6) can be moved back and forth with respect to a base (7) in a linear direction by means of at least one linear guide (10.1, 10.2).

4. The cutting mechanism as claimed in claim 3, characterized in that the carriage (6) is mounted in such a

way that it can be moved linearly with respect to the base 7, by means of preferably two linear guides (10.1, 10.2) arranged parallel to each other.

5. A cutting mechanism, characterized in that the carriage (6) is assigned at least one or a plurality of permanent magnets (12).

6. The cutting mechanism as claimed in claim 5, characterized in that the permanent magnets (12) are arranged between two linear guides (10.1, 10.2) in the region of an underside (11) of the carriage (6).

7. The cutting mechanism as claimed in claim 5, characterized in that a plurality of permanent magnets (12) are arranged in the region of the underside (11) of the carriage (6), slightly spaced apart from one another, over the full length of the carriage (6).

8. The cutting mechanism as claimed in at least one of Claims 1 to 7, characterized in that at least one activatable coil (15) is provided in the fixed base (7).

9. The cutting mechanism as claimed in claim 8, characterized in that at least one coil (15) between the linear guides (10.1, 10.2) is assigned to the base (7), the at least one coil (15) being arranged near the permanent magnets (12) of the carriage (6) between the linear guides (10.1, 10.2).

10. The cutting mechanism as claimed in at least one of claims 1 to 4, characterized in that at least one activatable coil (15) is provided in the region of an underside (11) of the carriage (6) and at least one permanent magnet (12) is provided in the fixed base (7), which coil and which magnet interact with each other.

11. The cutting mechanism as claimed in at least one of claims 1 to 10, characterized in that the cutting device (5) is formed by a rotating knife unit (8) and at least one servo motor (9), and the knife unit (8) has a centering piece (17) at one end, a guiding sleeve (16) being arranged upstream of the centering piece (17).

12. The cutting mechanism as claimed in at least one of claims 1 to 11, characterized in that the carriage (6) has a stop (19), which interacts in the respective end positions with two buffer elements (20), which are spaced apart, assigned to the base (7) and formed as spring damper elements (21).

13. The cutting mechanism as claimed in at least one of claims 1 to 12, characterized in that the base (7) is assigned two spaced apart inductive proximity switches (22.1, 22.2), which serve for a zero-point determination during a reference running time of the carriage (6).

14. The cutting mechanism as claimed in at least one of claims 1 to 13, characterized in that a linear movement of the carriage (6) with respect to the fixed base (7) can be exactly regulated and controlled by means of the linear guide (10.1, 10.2), activated by means of the at least one coil (15) assigned to the base (7), with regard to acceleration, negative acceleration and with regard to the maximum deflection.

15. The cutting mechanism as claimed in at least one of claims 3 to 14, characterized in that the carriage (6) can be moved back and forth with respect to the fixed base (7) virtually without any contact in an actively driven manner over at least one magnetic track (24.1, 24.2), which is provided inside or outside the linear guides (10), parallel to the latter.

16. The cutting mechanism as claimed in at least one of claims 1 to 15, characterized in that the base (7) and/or the linear guide (10.1, 10.2) is assigned an incremental or inductive length measuring system (18), which interacts with the carriage (6) for exact positional determination, it being possible by means of this positional determination for the speed of the carriage (6) to be determined and regulated.